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DAKOTA ZEPHYR

NOVEMBER, 1939

VOL. 4 NUMBER 4

Published by: The Soil Conservation Service

Brookings, South Dakota

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Dear Cooperator:

Fifteen New Farms in Ten Counties To Cooperate in Soil Conservation

An Extension Demonstration farm is one on which soil conservation practices are demonstrated through the cooperation of the county extension agents and the Soil Conservation Service. The county extension agent selects the farm and obtains assistance from the Service to help with the technical phases. The farmer agrees to carry on a complete soil and moisture conservation plan for a period of five years to demonstrate to the community how effective and profitable these practices can be. At the time of the last issue of the Zephyr there were sixty-four of these farms scattered throughout the state.

During the last three months technical help from the Huron project office has been furnished to the Extension Service for carrying on a demonstration program. Most of the practi-

ces that have been proven on demonstration areas are being recommended for these farms. In this way contour farming, strip cropping, water spreading, pasture furrows, and other valuable conservation methods are being placed in show windows around the state so all who are interested may study and analyze these practices.

Fifteen new farms have been planned on this basis during the past three months, and a few more will be included in the spring program. The counties in which the new Extension Demonstration farms have been placed include: Deuel, Roberts, Charles Mix, Aurora, Hamlin, Clark, Kingsbury, Day, Spink, and Faulk.

These farms will be watched with interest by farmers and landowners throughout the state. They will serve as a nucleus for tours, field days, and other meetings conducted by the Extension Service.

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Seventh District Organizes;
Plans Operations By Spring

The Emanuel-Choteau Creek Soil Conservation District in the southern part of Bon Homme and Charles Mix Counties has held its referendum and has been approved by the State Committee. This district comprises 202,594 acres in the vicinity of Springfield, Dante, Tyndall, and Avon. This is the seventh soil conservation district to be established in the state.

The referendum held on October 24 showed that 161,629 acres representing 79.8 percent of the total area was included in the balloting. Of the votes cast 79.3 percent were favorable. The State Committee approved the district organization and have appointed E. B. Dwight of Bon Homme County and Maurice P. Babcock of Charles Mix County to the positions of supervisors. On November 18 three additional supervisors were to be elected.

Much topsoil in the district has been removed by water erosion and gullying has become extensive in some fields according to opinions expressed at the hearing. Water erosion control will, no doubt, receive major emphasis in the plan of work developed by the district governing body.

A temporary committee of local people assisted by Kirk Mears and R. O. Swanson, county extension agents for Bon Homme and Charles Mix Counties, are now gathering information and basic data to be included in the program for this territory. It is anticipated that this district will be on an operations basis in time to begin work by spring. In number of operators in the area this is the largest district yet established in South Dakota, although two other districts have larger land areas.

Silver Creek District To
Involve 104,319 Acres

The Silver Creek Soil Conservation District in Sanborn County has completed its organization and is now functioning as a political subdivision of the state. At the referendum held in the 104,319-acre district area on September 1, 191 votes were cast for the creation of a district, and 38 against. This was an 84 percent favorable vote.

The land area represented in the vote cast was 83,694 acres, or 81 percent of the area. This vote met the requirements of the South Dakota law and the State Committee approved creation of the district. A charter was obtained from the Secretary of State completing the district organization.

The State Committee appointed W.R. Jamison and T. B. Dunn of Woonsocket as supervisors for one-year terms. At an election held on October 14 to select three men to complete the board of supervisors, the following men were elected: E. F. Baruth of Woonsocket, John Berg of Mount Vernon, and August J. Kundert of Forestburg.

One of the first activities of this group of supervisors was to elect W. R. Jamison as Chairman, E. E. Baruth as Vice-Chairman, and County Extension Agent Fred Larson as Secretary. They next drew up a program and work plan which was a statement of problems, objectives, and procedures for carrying on work in the district. This was submitted to the State Committee along with a request for assistance of the US Department of Agriculture. The program, work plan, and request for assistance were approved by the State Committee and have been submitted to Washington as a basis for securing assistance of the Department.

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Northern Clay County Plans District

A hearing was held by the State Soil Conservation Committee on November 6 at the Pleasant Valley Hall in Clay County to determine the interest of local farmers and landowners in the creation of a soil conservation district in that area. The information presented as to the desirability of the creation of the district was heard by the State Committee which was asked by the local people to approve the hearing and set a date for the referendum. Petitions requesting the hearing were signed by 124 landowners in the proposed area.

It was brought out at the hearing that erosion problems and moisture conservation problems of the county cannot be solved without cooperative action. The belief was expressed by many farmers that the best method of attacking land use problems is that of doing it cooperatively through the organization of a soil conservation district.

The territory to be included in this district, if it is organized, will be Glenwood, Star, Bethel, Pleasant Valley, and Riverside Townships. This territory lies in the northern part of Clay County. A local committee of landowners have been working on this project since last July, at which time the county planning committee put their stamp of approval on a district organization for Clay County.

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Three Districts Request Increase in Territories

New territory is constantly being added to the existing soil conservation districts through petition and referendum as prescribed by law. Since the last issue of the Zephyr three districts have submitted requests for ad-

ditional territory to be enclosed within their boundaries.

The Tri-County District with headquarters at Faith has added two townships to its area. A program of range management and moisture conservation carried on by the supervisors in the original district has proven so successful that these and other neighboring townships are now requesting to be admitted to the district. It is anticipated that other petitions from the Faith area will be received in the near future.

The Brule-Buffalo District has had an addition of almost one entire township just south of the old boundary in Brule-County. The program, sponsored by the supervisors in this district, is being augmented by the CCC Camp located at Chamberlain which assisted in carrying out soil and moisture saving practices. Howard K. Schultz, County Extension Agent, reports two other townships are now circulating petitions to be annexed to this district.

The American Creek District in Lyman County leads the parade in additions, having already completed one enlargement of 72,000 acres, and is now asking an additional increase of more than 150,000 acres. With this second annexation this district will be the largest in the state. The conservation program here is less than one year old, but already the supervisors are receiving more requests for assistance than they can handle.

It is considered a healthy sign when new territory asks to be added to an existing district. It can be interpreted to mean that the program of the district meets with the approval of landowners and farmers and ranchers over the state.

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Crested Wheatgrass, A Profitable Crop

"My crested wheatgrass gave me greater returns per acre than any other crop I raised this year," remarked Maurice Renot while discussing the success he has had with grass seeding through cooperation with the Soil Conservation Service on the Winner-Dixon Project.

Mr. Renot has about ten acres of this grass seeded in the fall of 1937. After being protected during the growing season of 1938, the grass completely crowded out all weeds and produced an excellent seed crop in spite of a heavy grasshopper infestation during the summer.

Mr. Renot is looking forward to making better use of his crested wheatgrass in the future by harvesting the seed at the proper time and making use of the grass for early and late pastures, as well as for hay during the summer. Mr. Renot estimates this grass will out-yield any of the native species, and believes it is a good grass for this community.

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Furrows Aid Water Absorption

"Water spreading furrows and ditches are very effective in storing additional water in the soil," according to D. B. Lyons, Chairman of the Clearfield-Keyapaha Soil Conservation District.

Last spring Mr. Lyons constructed some water spreading systems on his farm in Beaver Creek Township. After a heavy rain, on the fifteenth of June, the district supervisors made an inspection tour to determine just how effective the systems had been on the soil. A 36-inch soil auger was used to determine the depth of moisture penetration in the bottom of the fur-

rows and in the land adjacent to them. In one case along a spreader furrow, about 100 yards from where the furrow diverted water from a shallow draw, the moisture had penetrated below the 36-inch mark (the soil auger was unable to reach down to the depth of penetration) while just six feet above the furrows the soil was so dry at 18 inches that the soil auger would not remove the dirt from the hole.

This one small plow furrow, so placed that it would divert water running down a shallow draw after a rain, had diverted enough runoff water and stored it in the soil to equal a rain of twice the amount of penetration along the furrows.

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Deep-Furrow Drill Increases Yields

A comparison of the use of the deep-furrow drill and the method of broadcasting wheat and discing it in was demonstrated this year on the Roy Pierce farm seven miles north and one mile west of Wolsey, South Dakota.

The area broadcast and disced was seeded at the same time as the area seeded with a deep-furrow drill. The disced area was easily identified by the retarded growth throughout the season. The weed growth was about the same on the areas, though the wheat on the area seeded with the deep-furrow drill was more concentrated than that broadcast and therefore did not present as much of a cover to prevent weed growth.

The yield of wheat on the broadcast area was computed at 7.1 bushels of 54-pound wheat, and the area seeded with the deep-furrow drill 11.4 bushels of 57-pound wheat, or an increase 266.4 pounds of wheat of a better grade.

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Soil Conservation Practices

Appeal to Beadle Farmers

Soil conservation practices prove very popular in the southwest corner of Beadle County. In the spring of 1939 one cooperator joined with the Soil Conservation Service program of Camp SCS-4, Huron. The program has proved so successful that at the present time ten of his neighbors are now cooperators, using wind erosion methods, controlled grazing of pastures, water spreading devices, and conservation of water in dugouts and dams. At least ten more farmers in this territory have signified their desire to participate in the soil conservation program, which will make at least twenty cooperators by the spring of 1940.

Sand Creek crosses a large number of these farms and it is dry most of the year. By putting in a series of dams, dugouts, and water spreading devices this creek can be made useful to the farmer the year round.

The cooperators are interested in the planting of field tree strips and also wildlife plantings around the dams and dugouts.

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Brown-Marshall District Plants

900,000 Trees; Survival Good

During the spring of 1939, ninety miles of ten-row field shelterbelts were planted within the Brown-Marshall District, consisting of approximately 850,000 trees. In addition to this, seven miles of two and three-row plantings were made and also some woodlot and wildlife plantings using 33,000 trees.

The fall survival counts of trees and shrubs furnished by the Brown-Marshall District, and planted by cooper-

ating farmers, are very satisfactory. With a very heavy infestation of grasshoppers in certain areas and the lack of moisture during the forepart of the growing season, the average survival for all species of trees is 70 percent. The species having the highest percentage of survival are plum, sand cherry, box elder, cottonwood, American elm, hackberry, and green ash. The plum, sand cherry, and cottonwood have withstood the attacks of grasshoppers the first season very well. Other species were barked on the stem and killed back but many have started to grow again.

The survival of trees in tree strips planted with a tree planting machine compare very favorably with hand planting done in this district. The cost of planting by machine is about one-half the cost done by hand. It is planned to have at least an additional thirty miles of ten-row field shelterbelts planted in 1940 and at least 200 row miles of intermediate plantings.

It is realized that tree planting alone will not control wind erosion, but aided by field shelterbelts and supplemental plantings carried on, with a complete plan, including strip cropping, crop residue management, crop rotation, pasture and range management, and reseeding of grasses and legumes, will help to bring about more stable means of reducing damage to farm and range land by wind erosion.

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The last tour of the season was held at Alcester on September 14 at which time Hagen Kelsey, County Extension Agent for Clay County, arranged to bring a group of farmers and landowners to the conservation area. Over 80 people were in attendance at this tour and enjoyed dinner at the camp as well as the visits to the farms.

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Flood Waters Put To Work

Through the assistance of the Soil Conservation Service, the Pine Ridge Indian Agency utilized over one-hundred million gallons of flood water on their Boarding School farmland this year. In 1938 the CCC of the Indian Department finished construction of a large dam and canal on White Clay Creek near Pine Ridge, South Dakota. This spring while flood waters were being caught and held back by the dam the Soil Conservation Service supervised construction of over nine miles of field ditches to lead the water to the thirsty farm land. Gates and drops were installed to control the water and reduce flows to non-erosive velocities and the land was leveled so the water could be spread evenly over the surface. Due to this conservation of flood waters on White Clay Creek, the yield of crops on 170 acres of rich farm land was increased eight hundred percent this year.

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Contour Farming is Profitable

Contour farming is paying high cash dividends to Orson Lake, a Vega, South Dakota, farmer who farms 11 miles north and 3 miles west of Kimball, South Dakota.

To check the difference in yields between contour strip farming and "up and down hill" farming, Mr. Lake contour strip farmed 76 acres to corn and barley in the spring of 1939. The balance of his farm land was planted in the regular manner. The contoured crops were planted and handled in the regular way, the same as upon the area farmed up and down hill. When the crops were harvested this fall, the barley which had been farmed on the contour yielded 37 bushels to the acre and the corn yielded 35 bushels to the acre. The yields were 30 percent higher

on the contour strip farmed area than upon the land farmed in the old way.

According to Mr. Lake, contour strip farming is paying dividends in two ways:

1. Increased yield and improved quality of the grain
2. Reducing the effect of wind and water erosion.

Next year Mr. Lake plans to contour strip farm an additional 100 acres, which is all of the additional land which is feasible to contour. Mr. Lake is a cooperator in the Brule-Buffalo Soil Conservation District.

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The land area included within soil conservation districts in this state now totals 1,420,518 acres. The largest district to date is the Tri-County District with 402,319 acres. The American Creek District, when the second addition is added in the next few weeks will include the most territory of any district in the state.

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Dams and Dugouts Prove Popular

"Without these dams and dugouts my range could not be utilized properly," is the way John Mayer of Whitewood spoke of his stock watering facilities constructed in cooperation with the Soil Conservation Service at Ft. Meade. Mr. Mayer went on to say that the dugout furnished water for his stock in the early part of the season until the grass had been sufficiently grazed. He then moved his cattle to other pastures where the dam supplied the water. These stock watering places make it possible for him to follow a program of rotation grazing.

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Grass Observational Nurseries

Established in South Dakota

Recognizing grass as an important weapon in combating erosion and realizing the need for more information about the growth, hardiness and soil conserving qualities of both native and introduced grasses 10 grass nurseries have been established in South Dakota. These nurseries, established through the cooperative efforts of the South Dakota Agricultural Experiment Station, the soil conservation districts, Soil Conservation Service projects, and CCC camps are located at:

S. D. Agricultural Experiment Station
Brookings
Highmore Substation, Highmore
Cottonwood Substation, Cottonwood
SCS Nursery, Vermillion
SCS Project, Winner
Wolsey-Shue Creek Project and SCS-CCC
Camp #4, Huron
SCS-CCC Camp #3, Alcester
SCS Project, Pine Ridge
Brown-Marshall District, Hecla
Brule-Buffalo and American Creek
Districts, Chamberlain

In the nursery at Brookings more than 100 grasses are being tested. Plants for study were obtained by the State Experiment Station workers from various parts of the United States, Canada, and foreign countries.

At the nursery various methods of establishing grasses will be tried. Variations in seedbed preparation and in seeding dates will be made to secure information which it is hoped will enable grasses to be established more quickly and more easily than has been done in the past.

In the grass nurseries important grasses included in the trials are crested wheatgrass, western wheatgrass, Russian wild-rye, slender wheatgrass, brome grass, big bluestem, green needle-

grass, side-oats grama, buffalo grass. Reed's canary grass, and the more common grasses such as timothy, Kentucky bluegrass and redtop. A number of different varieties of alfalfa and clover have been planted. The alfalfa varieties include Ladak, Cossack, and Grimm. Clover varieties include strawberry, mammoth red, Manhardy red, Alsike white Dutch, and the common yellow and white blossom sweet clover.

Close observations will be made of grasses and legumes planted in each nursery by Experiment Station and Soil Conservation Service agronomists.

Additional activities along this same line have been planned by U. J. Norgaard, the Extension Agronomist, and Ralph E. Hansen, Extension Soil Conservationist in cooperation with the Soil Conservation Service.

Six hundred pounds each of western wheatgrass, crested wheatgrass, slender wheatgrass, brome grass and blue grama have been supplied to the Extension Service by the Nursery Section of the Soil Conservation Service. This grass has been shipped to the sixty county agents in the state, with ten pounds of each of the grasses being sent to each county.

The two agencies working together have worked out recommended plans for seedbed preparation, time of planting, rate of seeding, and other technical points to be emphasized. These observational plots throughout the state will be increased by additional plantings of Reed's canary grass and green needle grass. This work will supplement the activities carried on by the nursery section. The people of the state are becoming grass conscious and there is considerable demand for information concerning all the problems of getting a good stand of grass. Work of this type will do much to bring out this needed information.

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DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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